JANUARY, 1905.

ENTOMOLOGICAL NEWS

Vol. XVI. No. 1.

Cryptohalictoides spiniferus Viereck.

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PHILADELPHIA:
ENTOMOLOGICAL ROOMS OF
THE ACADEMY OF NATURAL SCIENCES,
LOGAN SQUARE.

Entered at the Philadelphia Post-Office as Second-Class Matter.

ENTOMOLOGICAL NEWS

Published monthly, **excepting July and August**, in charge of the Entomological Section of the Academy of Natural Sciences, Philadelphia, and the American Entomological Society.

ANNUAL SUBSCRIPTION, $1.00 IN ADVANCE.

Outside of the United States and Canada, $1.20.

Advertising Rates: 30 cents per square inch, single insertion; a liberal discount on longer insertions. No advertisement taken for less than 60 cents—Cash in advance.

All remittances should be addressed to ENTOMOLOGICAL NEWS, Academy of Natural Sciences, 19th and Race Streets, Philadelphia, Pa.

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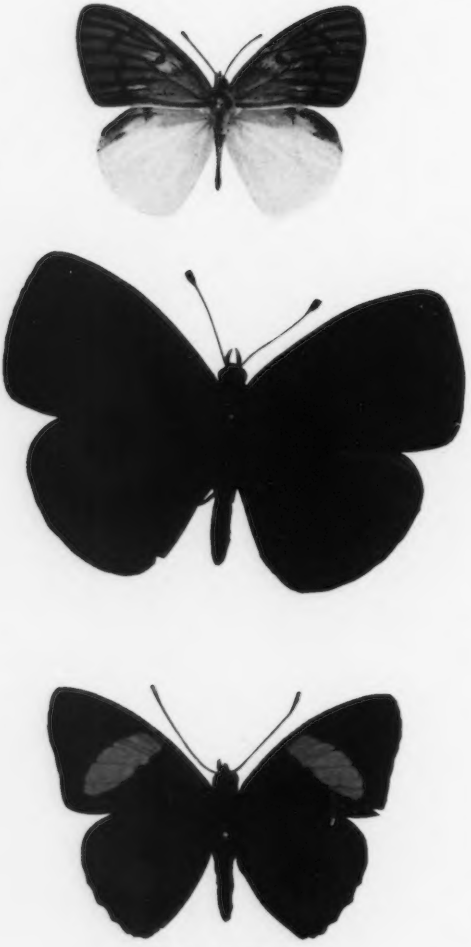

EXOTIC BUTTERFLIES.

ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XVI. JANUARY, 1905. NO. 1.

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Our frontispiece this month was made direct from specimens in the collection of the Academy of Natural Sciences of Philadelphia, by the Photo-chromotype Company of Philadelphia. This is one of the largest companies in America doing this line of work. The specimens represented are as follows: *Eronia phocæa* Felder, from the Philippines. *Cyrestis elegans* Boisduval, from Madagascar. *Catagramma cynosura* Doubl.-Hew., from Brazil.

Micro-Lepidoptera of Algonquin, Illinois.

By WILLIAM A. NASON, M.D.

The following list includes species of Lepidoptera of the families of Pyralidæ, Tortricidæ and other "micros" arranged in the order given in Dyar's "List of North American Lepidoptera." The list is interesting from the fact that it adds to our knowledge of the geographical distribution of species; and also from the fact that the place of capture is peculiar in its faunal relations.

The town of Algonquin is situated fifty miles northwest of the city of Chicago, and less than thirty miles, in a direct line,

west of the shores of Lake Michigan. It is located on the Fox River, which flows south, through the Illinois River, into the Mississippi. Hence the fauna partakes in character more of that of the Mississippi Basin than that of the Great Lake region—a fact which is proven by comparing the list as given below with the localities as given by Dyar in the work quoted above.

Mr. W. D. Kearfott kindly determined the species.

PYRALIDÆ.

Glaphria glaphryalis *Guenée.*
Desmia funeralis *Hübner.*
Evergestis straminalis *Hübner.*
Crocidophora serratissimalis *Zeller*
Nomophila noctuella *Denis&Schiff*
Phlyctænia ferrugalis *Hübner.*
Pyrausta æglealis *Walker.*
thestealis *Walker.*
penitalis *Grote.*
borealis *Packard.*
Nymphula badiusalis *Walker.*
obscuralis *Grote.*
obliteralis *Walker.*
Elophila magnificalis *Hübner.*
fulicalis *Clemens.*
Scoparia basalis *Walker.*
Pyralis farinalis *Linnæus.*
Herculia cohortalis *Grote.*
olinalis *Guenée.*
himonialis *Zeller.*
Schœnobius tripunctellus *Robinson.*
Crambus laqueatellus *Clemens.*
alboclavellus *Zeller.*
albellus *Clemens.*
hortuellus *Hubner.*
vulgivagellus *Clemens.*
ruricolellus *Zeller.*
interminellus *Walker.*
caliginosellus *Clemens.*
Argyria nivalis *Drury.*
Plodia interpunctella *Hübner.*

TORTRICIDÆ.

Exartema fasciatanum *Clemens.*
Olethreutes nimbatana *Clemens.*
hebesana *Walker.*
coruscana *Clemens.*
constellatana *Zeller.*
instrutana *Clemens.*
Eucosma strenuana *Walker.*
illotana *Walsingham.*
otiosana *Clemens.*
Thiodia signatana *Clemens.*
Proteopteryx deludana *Clemens.*
spoliana *Clemens.*
Ancylis comptana *Frölich.*
Cydia pomonella *Linnæus.*
Epagoge sulfureana *Clemens.*
Capua furcatana *Walker.*
Cœlostathma discopunctana *Clemens.*
Archips rosaceana *Harris.*
cerasivorana *Fitch.*
obsoletana *Walker.*
fervidana *Clemens.*
clemensiana *Fernald.*
Platynota sentana *Clemens.*
Pandemis limitata *Robinson.*
Tortrix pallorana *Robinson.*
albicomana *Clemens.*
fumiferana *Clemens.*

ŒCOPHORIDÆ.

Depressaria heracliana *De Geer.*
Semioscopsis packardella *Clemens.*

Two Elusive Dragon-flies.

By James G. Needham.

During three summers spent in Lake Forest I have been much afield, and have always kept a sharp lookout for dragonflies, which, after the first of June, are very common. Each year I have seen the shadowy form of one I could not capture. Sometimes I would flush it beside a woodland path, and it would disappear at single sweep among the treetops. Sometimes it would be seen speeding along high over head, apparently coursing for insect prey, but I never saw it at rest, and I could not distinguish its type of coloration. From its size and manner of flight I concluded it must be either a *Cordulegaster* or a *Macromia*, and there the matter rested for five years, with often a flash of wings and a vanishing shadow among the trees to remind me of a task of observation incompleted.

During the past spring I have collected from a number of the puny streams that enter Lake Michigan along the "North Shore," and in all of them have found nymphs of *Cordulegaster*. Grown specimens were repeatedly taken during May in a seine drawn for minnows, and on May 24th, while seining out a small pool in a stream, a single newly transformed adult was found upon the bank. It was *Cordulegaster obliquus* Say.

On June 26th I was surprised to see one sitting on a reed close to the ground in a wood in front of my house; I was still more surprised at being able to capture it *in my hat*. A careful bit of stalking and a good stroke did it. This was a a female that had wandered at least two miles from any stream suitable for the abode of its offspring.

As this specimen was fully mature I thought that perhaps, by visiting the stream in which I had found the nymphs most abundant, I might be able to make some observations on the habits of the adult. Such observations are much needed. So good an observer of dragonflies as the late Professor Kellicott wrote of the Cordulegasterinæ in his Odonata of Ohio, p. 74, "I have seen so few specimens on the wing that I do not feel justified in giving anything of their habits in the field," and among the few notes concerning *C. obliquus*, there are

chance remarks indicating that others have likewise found it elusive (see Williamson: ENT. NEWS, Vol. XIII. p. 110). So on the afternoon of the following day, June 27th, I betook myself to the largest of our north-shore streamlets, called by courtesy Pettibone Creek, whose south branch flows through a fine bit of native oak woods. In this south branch are many deep and shadowy pools overhung with spreading clumps of witch hazel, and the connecting streamlet is hardly more than a rivulet, winding among small moss-grown boulders or cutting under green banks of grass and sedge.

The pools are the home of the *Cordulegaster* nymphs. They lie on the bottom covered by the silt. They do not burrow, but descend into the silt by raking it out from beneath with their legs. Then when deep enough they kick it up over their backs and hide themselves absolutely against observation, having only the sharp upper angles of the eyes, the sensitive antennæ and frontal fringe, and the respiratory aperture at the tip of the abdomen exposed. Thus they lie in ambush, wholly inactive, unless the wandering near of some mayfly nymph (here *Leptophlebia pæpedita* Etn.) or gnat larva invites a thrust of the enormous grasping labium. They have competitors for this food, also dwelling in the pools, chiefly the red-bellied minnow, and the black-nosed dace.

I hoped this afternoon to discover cast nymph skins beside the stream, to find the male which had as yet escaped me, and to observe the female ovipositing, as well as to attend to another matter to be mentioned further on. On first approach I saw a fine male sitting upon a stout reed over the stream, at once he dashed off into the woods. Soon I saw another coursing low over the narrow part of the stream, here almost blocked with overgrown clumps of cowslip and water plantain. His beat was the narrow and sinuous lane which the stream cuts through the deep and bottom land herbage. I let him pass once and then took my place beside this lane; presently back he came, after the manner of his kind, directly over the water. A quick sweep of the net brought up from behind just as he was passing, and I had my first male specimen fluttering inside. I caught another on another beat, but the half dozen or more

that I flushed from sunny openings in the bottomland gave me no chance whatever of capture.

I found cast skins, also, half a dozen of them in all; but these were unusually hard to find, being heavily covered with bottom silt, which matches well the trash in which they lie. All were within a foot of the water's edge, and all but one lay flat upon the ground.

The nymph of *C. obliquus* is in general appearance very like those of half a dozen other species of the genus. It agrees with the brief description given by Dr. Hagen for a Texas specimen (from the collection of the late lamented Mr. McLachlan) which he referred to this species (Trans. Amer. Ent. Soc., XI, 291, 1885), except in size. The largest female nymph I found measures in total length 39 mm., abdomen 25 mm., hind femur 6 mm.; width of head 8 mm., of abdomen 10 mm. The whole body is densely clothed with stiff hairs, and these hold a complete investment of silt. When one cleans a nymph carefully with a soft brush (it is a prolonged and tedious operation), he finds beneath the silt quite as much of color pattern as is usually shown by dragonfly nymphs. The frontal fringe of stiff radiately arranged bristles comes out more clearly also, and a tuft of black bristles above each lateral ocellus. The "epaulets" of the prothorax are large, obliquely oval, and are fringed on their external margins with stiff bristles. The legs are short, yellowish, with interrupted apical and subapical rings of fuscous appearing on all the femora. The wing tips reach the base of the fifth abdominal segment. The abdomen is without dorsal hooks, but there are stout straight lateral spines on segments eight and nine, the one on the ninth segment slightly larger and equaling in length half the length of the segment. Dr. Hagen mentioned these spines, but he omitted to notice the other diagnostic characters, which are in the armature of the labium. There are six lateral setæ, and about thirteen setæ on the mentum each side, the outermost eight stronger and in a close set series. The bifid middle tooth of the labium is much as in *C. diastatops*.

I did not observe the female ovipositing, as I had hoped to do.

But I had another errand dragonfly at Pettibone Creek this afternoon. In May I had found a single nymph of a species of *Somatochlora* in the rapid portion of the stream between two pools. I took it home alive, and a visitor to my laboratory (who meant well), fed it to the fishes in the aquarium. I went again to the creek, and with considerable searching, found three more. All were clinging to matted sedge roots in the edge of the current, and were obtained by stripping the mats upward with a little sieve dipper. I had never seen a live imago of *Somatochlora* in Illinois and I thought this afternoon I might find one, or, more probably, find some empty nymph skins to supplement my scanty supply of the nymphs.

Dame fortune was kind. On the very bank that trailed in the undercutting stream the root mats from which I had taken the nymphs, there sat a fine male of *Somatochlora linearis* beside its recently abandoned skin ; a few feet distant sat similarly an equally fine female, and I took them both in out of the weather.

Within ten feet of the two imagos I found a dozen nymph skins of the same species, clinging to the grass up which they had climbed none of them more than a foot above the surface of the water.

These proved to be the same species as the nymph I have already described (in Bull. 68, N. Y. State Museum, p. 269), as *Somatochlora* sp. No. 2, a live specimen of which came into my possession at Ithaca eight years ago, and was lost through my own ignorance. They are older, and dirtier, and do not show the color pattern I there described ; but they are no doubt the same species ; no other imagos were seen. But I had enough for one afternoon. Any naturalist who has been long baffled in seeking acquaintance with some little resident of his own neighborhood will understand my feeling of satisfaction at having made some progress knowing these two shy favorites of mine. How delightful had been this afternoon. It had yielded me new life history material ; it had furnished the keys to long standing puzzles, and it had provided me choice specimens to be shared with my friends who love them, and who have generously shared their own treasures with me. Are not these the abiding pleasures of a naturalist?

The Flat-bugs (Aradidae) of North Carolina.

By Franklin Sherman, Jr.
(Entomologist Dept. Agr., Raleigh, N. C.)

Although the following list is no doubt incomplete it is thought well to publish it at this time, as it represents considerable work that has been done in collecting the Aradidæ of this State. Two species are included on the authority of Bergroth; all the others have been collected in the last two or three years, the identifications having been made by Mr. Otto Heidemann, of the U. S. Department of Agriculture.

Mr. W. F. Fiske, of the Bureau of Entomology, has collected this family to a considerable extent in the vicinity of of Tryon, N. C., and Heidemann has recently described several new species from his material (in Proc. Ent. Soc. Washington). The author has collected considerably at Raleigh and on Cape Hatteras, and these three localities represent, respectively, the mountain, middle, and sandy coast regions of the State, and should make a good exhibit of the diversity of forms found.

I regret that I am not able to present this list entirely in the order of their natural sequence. The signs (W), (C), and (E), immediately after the name of the locality denote whether it is in the west, central, or eastern portions of the State.

1. **Aradus robustus** Uhl.

Cape Hatteras (E), January, 1903, F. Sherman.

2. **Aradus similis** Say.

Goldsboro (E), May 2, 1901, Sherman.

Tryon (W), April 9, December 14, 1903, under bark of girdled elm, W. F. Fiske.

3. **Aradus quadrilineatus** Say

North Carolina (E) Bergroth (see Proc. Ent. Soc. of Wash'n, Vol. II., p. 335).

4. **Aradus rectus** Say.

Raleigh (C), June 30, 1902, F. Sherman.

5. **Aradus falleni** Stal.

Raleigh (C), June 28, 1903, May, 1, 7, 1904, F. Sherman.
Tryon (W), May 30, 1903, at light, W. F. Fiske.

6. **Aradus niger** Stal.

Southern Pines (S. E.), January, 1904, F. Sherman.

7. **Aradus acutus** Say.

Southern Pines (S. E.), March, 1904, very dark specimens, F. Sherman.

Tryon (W), April 17, 1903, beneath bark of rotten oak, W. F. Fiske.

8. **Aradus crenatus** Say.

Tryon (W), April 4, 7, 17, 1903, under bark of dead tulip tree, W. F. Fiske.

9. **Aradus cinnamomeus** Panzer.

Tryon (W), 1903, common in spring and early summer, on large pine tree. Many caught in pitch from wound, W. F. Fiske.

10. **Brachyrhynchus lobatus** Say.

Raleigh (C), April 6, 1902, dead when taken, F. Sherman.

11. **Brachyrhynchus granulatus** Say.

Cape Hatteras (E), January, 1903, F. Sherman.

Littleton (N. E.), April 2, 1902, F. Sherman.

Tryon (W), March 6, April 9, 1903, numerous on yellow pine, dead some years, and under bark of dead maples. November 17, 1903, under bark of chestnut felled last spring, W. F. Fiske.

12. **Brachyrhynchus simplex** Uhler.

Cape Hatteras (E), January, 1903, many under bark of fallen log, F. Sherman.

Raleigh (C), March 17, 1902, under bark of fence post, F. Sherman.

13. **Brachyrhynchus mœstus** Stal.

Cape Hatteras (E), January, 1903, abundant under bark of fallen log, F. Sherman.

14. **Brachyrhynchus ovatus** Stal.

North Carolina (E) Bergroth (see Proc. Ent. Soc. of Wash'n, Vol. II., p. 336).

15. **Neuroctenus pseudonymus** Bergroth.

Mr. Heideman states that this species was originally described from North Carolina.

Saluda (W), May 20, 1903, beneath bark of decaying chestnut, W. F. Fiske.

16. **Neuroctenus elongatus** Osborn.

Tryon (W), April 3, 1903, beneath bark of decaying chestnut, W. F. Fiske.

17. **Neuroctenus hopkinsi** Heidemann.

Hendersonville (W), May 26, 1903, under bark of fallen white pine, W. F. Fiske.

18. **Neuroctenus simplex** Uhler.

Tryon (W), March 9, November 17, 18, 1903, beneath oak bark, W. F. Fiske.

Saluda (W), March 25, 1903, W. F. Fiske.

19. **Aneurus fiskei** Heidemann.

Tryon, May 21, 1903, W. F. Fiske.

Some American Hymenoptera.

By T. D. A. COCKERELL.

Halictus armaticeps Cresson, var. γ.

Smaller than usual, and more or less reddened; sometimes the first two abdominal segments of the female bright ferruginous; head of the female large, broader than thorax.

Because of the large head, this cannot well be referred to var. *texanus* (Cresson). It has rather a distinct aspect, but I find no satisfactory characters for specific separation.

Hab.—La Cueva, Organ Mts., New Mexico, about 5300 feet, Sept. 3 and 4, both sexes (*C. H. T. Townsend*); Mesilla, New Mexico, June 24, one ♀ (Cockerell).

Monidia, n. n. (*Monia*, Westwood, Tr. Ent. Soc. London, 1875; not Gray, 1849). Type *Monidia grisea* (*Monia grisea*, Westwood). Mexico. Length about 8 mm.

Dianthidium parvum (Cresson).

A cell found at Las Vegas, N. M., consisting of resin and small stones, contained an immature but quite recognisable

D. parvum. This affords further support to the opinion that all species of *Dianthidium* make resin nests.

Exomalopsis verbesinæ Ckll.

Tempe, Arizona, one ♀ at flowers of *Heterotheca*, in October (Cockerell). This species is certainly not an *Anthophorula*; it is allied to *E. solani*, but smaller and narrower, with redder tegulæ and more brightly-colored antennæ. It is new to Arizona.

Exomalopsis solidaginis Ckll.

La Cueva, Organ Mountains, New Mexico, about 5300 feet, September 5, at flowers of *Lippia wrightii*, 3 ♂ (*C. H. T. Townsend*). These are a little larger than the type, with the hair averaging paler. It is not impossible that they represent the male of *E. solani*.

The three forms of *Exomalopsis* s. str. found in the United States may be separated thus:

Abdomen thinly but copiously hairy, the bases of the segments not contrasting, nor the hind margins with white bands; flagellum not brightly colored beneath; males . . . . . *solidaginis* Ckll.
Abdomen with narrow white marginal hair-bands; females. 1
1. Larger and broader; tegulæ piceous . . . . . *solani* Ckll.
Smaller and narrower; tegulæ dark brown or reddish, antennæ more brightly colored . . . . . *verbesinæ* Ckll.

All the others (*sidæ* Ckll., *coquilletti* Ashm., *texana* Friese, *brunevi* Crawf., *compactulus* Ckll.,) have in the male the light clypeus of the group *Anthophorula*.

Odynerus rufinodus Cresson.

I took this at Mesilla Park, New Mexico, June 14. The insect is closely allied to *O. bellulus* Cresson, and has been confused with it. The females of the two are easily separated as follows, the notes on *bellulus* being derived from Cresson's type in the U. S. National Museum.

O. rufinodus Cr. Second abdominal segment without the lateral yellow spots of *bellulus*; post scutellum black; mesothorax with a median black line; front without a yellow mark; clypeus black; head and thorax larger. New Mexico.

O. bellulus Cr. Second abdominal segment with a yellow spot on each side; post-scutellum ferruginous; mesothorax

without a median black line; front with a yellow mark; clypeus rufous, upper margin broadly yellow. Texas.

Both have ferruginous legs, a yellow patch on pleura just below tegula, and four-dentate mandibles, the innermost tooth rudimentary.

The Occurrence of a Tropical Butterfly in the United States.

By C. T. BRUES.

During the month of October, 1899, while collecting insects along the bed of a dried up creek near Austin, Texas, I noticed among the large numbers of butterflies which frequent such places a peculiar species which later proved to be *Eubagis* (*Dynamine*) *dionis* Hubn.** ** (I have examined specimens of the species in the American Museum of Natural History, and there can be no doubt of its identity). This was the first and last time that I have observed it, although the three following years were spent collecting in the same vicinity. At the time there were numbers of them flying about the mud holes still remaining along the course of the stream, which annually dries up during the summer months. All were in fresh condition, and there can be no doubt that they had been breeding in the locality. What may have been their larval food plant I cannot suggest, as their normal one seems to be unknown.

The genus *Eubagis* is strictly neotropical and is represented by some thirty species from Mexico, Central America and South America. According to a note under the species in question in the Biologia Centrali Americana, this form is restricted to Southern Mexico, Guatemala, Nicaragua and Costa Rica, and the opinion is held that it is peculiar to Central America.

Whence came the numerous specimens in central Texas would be hard to say, especially since they seemed to be breeding there. Apparently the summer had been very favorable for the development of insects as Hymenoptera and Diptera were more abundant than I have ever seen them in that part of the country. Among the butterflies, another southern spe-

cies *Mestra* (*Cystineura*) *amymone* which is usually restricted in its northern distribution to the extreme southern portion of Texas was very common about Austin. In fact dozens of them could be captured hovering about the bushes of *Eisenhardtia* on the University campus. In former years they were much less numerous although an occasional specimen could be found.

So far as I could ascertain no especially severe or protracted southerly winds had been experienced there during the summer, such as those which sometimes serve to carry large Lepidoptera for great distances.

Whether the *Eubagis* will ever establish itself as a permanent inhabitant of this locality remains to be seen.

Notes on Prionapteryx nebulifera Steph.

By ERICH DÆCKE, Phila., Pa.

(See Plate II.)

The stunted growth of an isolated patch of huckleberry bushes attracted my attention while collecting at Iona, N. J., May 26, 1902. The bushes were hardly eight inches high growing on a stretch of white sand so commonly found on the pine barrens of southern New Jersey. The partial absence of leaves on the bushes evidently indicated the work of some insects, and looking closer I found that almost every stem was thickened by a tube of white sand loosely spun together, leading from the ground and diverging to the various branches. Whenever a branch was defoliated the sand tubes were rather dilapidated and partly missing, but the sand tubes leading to fresh clusters of leaves looked as if they were of recent construction. I opened one of these tubes, searched downward, and reached a nest of minute black ants *Prenolepis parvula* Mayr., about three inches below the surface of the ground. It did not seem probable that these little ants could consume the leaves of huckleberry, and the fact that the sand of these tubes was put together by fine silken threads, left no doubt that some Lepidopterous caterpillar was responsible for the construction of these tubes, but I could not find a trace of a caterpillar that day. I visited the place again, and after searching diligently, found a very active and evasive cater-

ON PRIONAPTERYX NEBULIFERA STEPH. DAECKE.

pillar eagerly trying to conceal itself under the sand. Searching further I found one sand tube leading underground and terminating into a bag-shaped cocoon which contained a healthy Lepidopterous pupa, and from which emerged a fine specimen of *Prionapteryx nebulifera*, June 26, 1902.

The identity of the moth was established, but there remained one physiological question unsolved. Why do the ants and caterpillars live together in these sand tunnels? The caterpillars undoubtedly do the spinning, but it does not seem to be the nature of a caterpillar to carry sand, especially as it had to be done seven or eight inches in a vertical direction. An ant cannot spin, but is particularly adapted to carrying grains of sand. Here I was confronted with a strange and interesting proposition, namely: do these ants and caterpillars cooperate in the building of this structure?

To ascertain this I visited the place once more, but every trace of the colony had disappeared. I searched in vain for specimens all summer of 1903. At last, it was May 21, 1904, one more specimen was found at Brown's Mill Junction, N. J. This time the food plant was sand myrtle, *Dendrium buxifolium* Desv. The caterpillar was there and the ants were there. I carefully opened the burrow and found as before that it lead to a small cavity underground inhabited by ants, but close examination proved it to be nothing else but a chamber in which the caterpillar deposited its excreta and the ants acting as some sort of scavenger. This cavity is built on an angle, while the cocoon is built vertically from the tube as soon as the caterpillar is ready to pupate.

For further observation I secured the caterpillar and dug out a small bush of sand myrtle, which, reaching home, I planted in a flower pot, released the caterpillar thereon and covered the pot with a glass closely fitting to the edge of the pot. The caterpillar began to work immediately, and in two days had built a tube along the stem of the myrtle high enough to reach the nearest leaves for food. This proved

conclusively that the ants had nothing to do with the tube building. I observed the caterpillar for two weeks. The tube being added to only in the forenoon at the rate of one to two inches per day. At no time was the caterpillar visible, and it would build all around the leaves before feeding. One interesting fact seemed to me worthy of note, that when no twig was available to the nearest cluster of leaves, it would erect the tube free in a straight line towards it, though the sense of sight must be out of question. By some instinct the direction of the nearest food is known though the caterpillar is encased.

Ropronia, an anomalous Hymenopteron.

By J. CHESTER BRADLEY, Ithaca, N. Y.

In every natural scheme of classification in zoology one must expect to find intermediate forms between the groups that tend to link them together. Were all such forms that have existed still in existence, classification would be impossible. It is only by the loss of connecting links that we are able to define groups at all. This loss may occur in two ways, either by total extinction, or the link although in main preserved to us may itself have specialized at least along certain lines during the ages, so that the resulting form to-day may be very far different from what the original link was.

Let us consider a diagram in which A represents a type of animal in past ages. At D suppose a divergence in descent which by multiplication along successful lines of specialization has formed two large families, B and C. Then D represents a form which is a connecting link between these families. This may in rare cases be preserved to us at E without change, in which case the determination of its true relations becomes a comparatively simple matter. But suppose the link D has continued to specialize along unsuccessful lines so that it has not flourished as B and C have. Many characters of B, and many of C, may be retained, and others once characteristic of A, may be retained, but lost in B and C. These latter may

still be preserved in far distant groups. Other characteristics may be acquired different from either B or C. Let us suppose that the old form D and most of the line D–E has been so unsuccessful as to be entirely lost, and we find two large families, B and C, but along D–E only a single form left. Such a remnant is termed aberrant or anomalous, and it becomes a great problem to systematists to understand its peculiar relations. Such forms are found in every large group, and it is with one such that we have here to deal. The older systematists generally threw all such occurring in a group together, thus forming an unnatural heterogeneous sub-group, which is unquestionably the easiest way to treat them, although admittedly a temporary makeshift. This treatment has also been induced by the fact that such forms are apt to retain certain ancient characteristics in common which may have become lost by the groups to which they are really most nearly related. Another almost equally great, although less artificial mistake, is to include them as aberrant members of some family with which they have some character in common, or which they seem most nearly to approximate. It is far more apt to be the case that these so called aberrants, as in the case of E in the diagram, are the sole remnants of a perhaps never large or successful group, but equally distinct from B and C. To the objection that to recognize all such groups as distinct would multiply to unwieldly proportions our classification, we answer that the purpose of classification is not merely to act as a convenience for students in determining species, but to express conceptions of natural relationship.

The true relations of such anomalies as we have been discussing can only be determined, if, at all, by exhaustive study of the taxonomic value of all, or at least the most important characters of the animals forming the groups in question. Only in this way can a conclusion fairly be drawn. In the Hymenoptera it is probable that no character would shed such light as the wing venation. But so great is the complex in the Parasitica that it means years of labor before their classification can be properly worked out from that basis and correlated with other characters.

Some years ago Mr. W. Hague Harrington collected near Ottawa, Canada, a strange Hymenopteron which somewhat resembled an *Evania* with a red abdomen. This he sent to L'Abbe Provancher who described it as generically and specifically new to science under the name *Ropronia pediculata*. It was very evidently an anomaly, and Provancher in an attempt to account for it placed it in a group of Braconidæ which he called Flexitiventres. He considered it allied with the Ichneumons from its general appearance, and on account of the absence of the second recurrent nervure he placed it as a Braconid. But there is no known member of the Ichneumonoidea that has the costa and radius separate, thus forming a distinct costal cell, except Stephanidæ, and the small and peculiar family Evaniidæ, which has been generally used as a dumping ground for almost any anomalous Hymenopteron that would not fit elsewhere. Provancher felt that Braconidæ was not the right group, for a little later he changed its position to the Helorinæ in the Proctotrypidæ. This explained the presence of a costal cell. In fact the whole wing venation bears a superficial resemblance to *Helorus*. But when Dr. Ashmead seven or eight years later came to write his monograph of the Proctotrypidæ, he gave voice to the belief that it was a Braconid of the subfamily Pachylomatinæ. This conclusion was based on Provancher's description and figure of the wing. Later Dr. Ashmead described from males two new species and erected the family Heloridæ in the Proctotrypoidea, containing two subfamilies and three genera. The second subfamily, Monomachinæ, contained *Ropronia*, and also the highly anomalous South American Monomachus. That is what has been done with *Ropronia* to date, and that is where it is apt to stay for a while. But we all have a right to our own opinion, and I must confess to inability to agree with Dr. Ashmead.

My attention was first called to the insect in 1903 while collecting near Philadelphia. I was so fortunate as to take a ♀ of *garmani* Ashm. The description and figure of this appeared in the June, 1904, number of the "NEWS," the first figure of the genus ever published except Provancher's cut of the wing. Last July while collecting near Ithaca, N. Y., Dr. Mac Gilli-

vray took a ♀ of a species new to science which he has kindly permitted me to describe below.

There remains for *Ropronia* only a choice of the Ichneumonoidea or Proctotrypoidea or of a new superfamily between them. In the Aculeates and Proctotrypoidea the arrangement of the abdominal segments is such as to make the sting-like ovipositor arise from the apex of the abdomen; in the Ichneumonoidea it arises apparently from the ventral surface anterior to the apex, caused by a modification of the ventral segments. A study of the two ♀'s of *Ropronia* proves to my satisfaction, although not beyond the limits of doubt, that the arrangement in *Ropronia* is of the Ichneumonoid type, but other characters, such as the chitinization of the ventral segments, the nature and insertion of the petiole, the head and the wing venation are not like those of Ichneumonids, excepting perhaps Evaniidæ. It is evident to me that we have an old type perhaps greatly modified, as in the hypothetical case of E in the diagram. Its true relations will continue a matter of doubt until some one works out from exhaustive and systematic study the phylogeny of the parasitic Hymenoptera. Until this be done, I shall personally consider it as representing a distinct family,—ROPRONIIDAE between Ichneumonidæ and Evaniidæ. Of one thing I am certain, that it has no close affinities with *Monomachus* in which the type of abdomen is Proctotrypoid, and the shape utterly different; in fact there are no characters in common except a superficial similarity in wing venation, which may mean, so far as we know, perhaps much, perhaps nothing at all.

Ropronia ashmeadii n. sp.

♀ Dull black, abdomen except petiole, front femora except basal third, front tibia and base of tarsi bright red.

Head seen from above transverse quadrate, the eyes prominent, the distance behind them considerable; occiput rather sharply angled; mandibles black, bidentate, clypeus evenly rounded; face in front slightly swollen mesally below the antennæ, very irregularly roughened by sharp irregular wrinkles, interspersed with shallow punctures of various sizes, in a row around the edge of the rather small eyes and on the temples and cheeks sub-regularly quadro-reticulate; above the antennæ the wrinkles are less irregular, drawn out into long reticulations, again shallow

and irregular on the occiput, with a tendency toward radiation from the ocelli; antennæ filiform, fourteen-jointed, scape shorter than fourth joint, second joint about half the length of the third joint, latter longer than fourth.

Collar rather broad, pronotum extending back to tegulæ; humeral angels rounded; mesonotum with large roundish punctures, almost reticulate with broad meshes, a small area in the middle of the front marginal portion with numerous very fine elongate punctures; parapsidal lines distinct; pleura rather similarly sculptured to dorsum, a hollowed area above the middle legs which is nearly devoid of punctures and smoothly polished; venter minutely and shallowly punctate; rest of dorsum and propodeum punctured about as mesonotum; post-scutellum mesally raised into a distinct peg-like vertical short spine, sides of post-scutellum more or less smooth polished; propodeum very convex, overhanging the insertion of the petiole; legs short, claws without more than one or two fine bristle-like pectinations, which are perhaps mere bristles.

Wings tinged slightly smoky, a darker spot beneath the stigma, venation as normal in the genus. Abdomen polished, ovipositor not exserted. Length 6.5 mm.

One female, taken by Dr. A. D. Mac Gillivray while collecting in company with the author along the side of a wooded road, in the Larch Meadow, just south of Ithaca, New York, July 9, 1904. I am much indebted to Dr. Mac Gillivray for permitting me to study this interesting specimen.

I take pleasure in dedicating this species to Dr. Ashmead, who has already made known to science two species of the genus. The species differs from *pediculata* Prov. most distinctly in the process of the post-scutellum.

Type in the collection of Cornell University.

It is possible that this species and *californica* Ashm. with elevated post-scutellum and non-pectinated claws are generically distinct from *garmani* and *pediculata*.

LEPTOGLOSSUS ZONATUS Dallas.—Professor R. H. Forbes has sent me a number of specimens of this species (kindly identified by Mr. Heidemann) which he collected at San Ignacio, Lower California. He also reports the insect from Santa Agneda, and concludes from his observations that it is a very dangerous pest. Its habits appear to be similar to those of the closely allied *L. phyllopus;* Prof. Forbes observed it to attack limes, oranges, watermelons, dates, and in one instance a green cotton boll. At the same time Prof. Forbes sent some insects which were said to be killing the orange trees at Hermosillo, Sonora. They are *Icerya purchasi* Maskell.—T. D. A. COCKERELL.

The Larva of Hepialus sequoiolus Behrens.

By FRANCIS X. WILLIAMS, San Francisco, Cal.

The larva of this interesting moth has, so far as I know, never been found or described, so I give herewith the result of my observations upon the species.

Mature larva—Head slightly bilobed, rounded, partly retracted under segment 1, shining reddish-brown black towards mouth-parts; antennæ normal, spinneret slender. Ocelli 6 in two parallel rows. Width of head 4 mm. A few hairs arising from head. Body cylindrical, much wrinkled, slender; segments 2 and 3 somewhat swollen, 12 and 13 tapering. Larger abdominal segments subdivided into four distinct wrinkles, other segments subdivided less distinctly. Thoracic segments, first wrinkle of first abdominal and last half of segment 12, segment 13 and prolegs of a dirty white color, rest of body wood-brown. Body adorned with plates and tubercles, all bearing brownish hairs, and regularly arranged. The substigmatal tubercles are smaller than the superstigmatal. Thoracic legs yellowish, darker towards tips, and bearing a few hairs. A small hair caudad of each leg; prolegs normal. A large amber-colored dorsal plate on each thoracic segment, that of 2 and 3 smaller and darker on edges. Segment 1.—Dorsal plate roughly trapezoidal, extending laterad almost to stigma, stigma black, oval, larger than following. Above stigma on plate a large black piliferous spot. Directly between spot and stigma on plate, a small hair. On anterior portion of plate extending laterad a transverse row of five superstigmatal hairs, the two lowest close together. One substigmatal tubercle bearing two hairs. Segment 2.—Dorsal plate on wrinkle 2, oblong, pointed, bearing two hairs; behind dorsal plate two large bilobed subdorsal plates each bearing four hairs. Extending laterad, two rows of tubercles of two tubercles each; one, large and conical on fold, one on fold 2 and other two on fold 3. Segment 3.—Dorsal and subdorsal plates smaller than in segment 2, and two large tubercles between subdorsal plates; lateral arrangement same as in segment 2. Abdominal segments.—On each side of segments, except 13, four superstigmatal tubercles in two transverse rows on fold 2 and 3 respectively. On segments 6–9, two oblique rows of substigmatal tubercles of two and four tubercles each, the first row beginning almost on the stigmatal line, found also on segments 4, 5, 10 and 11; the second row encircling the outer base of prolegs. Between prolegs two hairs. One larger dorso-lateral two-haired tubercle on segments 4, 5, 10, 11 and 12. Between tubercles, a transverse row of small ventral tubercles four on segments 4 and 5, two on 10, 11 and 12. On segments 5 and 10 an additional row of two very small flat tubercles. On segment 12 three lateral tubercles, a continuation of second superstigmatal row. Segment 13: anal plate roughly triangular bearing two pairs of subdorsal hairs and two anterior ones; a few ventral hairs, some on prolegs. Length of body 44 mm.

Width 5.90 mm. Described from one living larva and several alcoholic specimens. Measurements taken from a large specimen, some larvæ being only 34 mm. long when fully grown; this is not surprising, however, as the imagos also vary greatly in size.

Have found the larva in the stems of *Eriophyllum stædifolium* and in the root of *Helenium puberulum* but most frequently in the large yellow lupine. The larva bores longitudinal passages just above ground or a little under, turning its burrow at right angles and usually closing its opening with excrement. I have taken from the same plant, *Hepialus* larvæ some about one-third and others full grown; I should judge therefore that the larval life is about two years. Have found larvæ in last stage from June to this date, December. They are very active, moving backwards easily. They should be put in separate vials or receptacles when collected otherwise they will invariably bite off each other's thoracic legs, and otherwise mutilate each other. *H. sequoiolus* is not rare in the vicinity of San Francisco where I collected larvæ of the same; it is also taken in Alameda and Mendicino counties.

A New Thrips from the Philippine Islands.

By WILLIAM H. ASHMEAD, M. A., D. Sc.

Among some parasitic Hymenoptera sent me by Father Robert E. Brown, of Manila, I found a single specimen of a Thrips, and, since these insects are still unknown in the Philippines, there being none recorded in Uzel's Monographie der Ordung Thysanoptera, I submit below a brief description of it.

Genus **IDOLOTHRIPS** Haliday.

Idolothrips tibialis n. sp.

♀.—Length 2.4 mm. Coal-black, smooth and shining, but with all tibiæ and tarsi, except the pulvilli, yellowish-white; the basal four joints of the antennæ are black, the three following joints whitish towards the base, but brownish at apex, the small terminal joint wholly brown. The head is very nearly three times as long as wide, the sides parallel; eyes pale. The thorax laterally, in front of the insertion. The wings have a row of four or five short, spine-like bristles. The abdomen is elongate, pointed at apex, and has numerous long, bristly hairs above.

Type.—No. 8,132, U. S. N. M.

Manila, (Father Robert Brown).

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at out earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., JANUARY, 1905.

*Cryptohalictoides spiniferus** ♂ is remarkable for the peculiar and elaborate production of the legs into processes and spines fairly well show in the illustration. It is on this account possibly farther removed from the usual than any other insect described during the past year. The structures are symmetrical and certainly serve some special purpose which it remains for some energetic biologist and physiologist to discover. There was almost no interest shown in the selection of an insect for the cover of the NEWS by our subscribers and we made the selection. In the January, 1904, NEWS we stated that the most remarkable insect described during the preceding year would be placed on the cover of each January NEWS and asked for suggestions from our readers.

A subscription blank has been placed in each number of this issue of the NEWS. It does not mean that you have not paid for 1905, but is a gentle reminder if you have not paid, and affords you an opportunity of promptly doing so if you have failed to attend to this very important matter.—TREASURER.

* Viereck, ENT. NEWS, XV, 261, 1904.

NEW TREATMENT FOR THE WOOLY APHIS.—Simply use Christian Science. There is no such insect; it is an invention of mortal mind. This is readily demonstrated by consulting Webster's or the Century. The proper spelling is *woolly*, and there is no word wooly,—hence no wooly aphis, and no need of bulletins on the subject. Missouri and Georgia entomologists, and all agricultural editors, please take notice.—MRS. EDDY (I don't think).

Entomological Literature.

RESEARCHES ON NORTH AMERICAN ACRIDIIDÆ. By Albert Pitts Morse. Publication No. 18, Carnegie Institution of Washington. 53 pp., 8 pls., 13 text figures.

In the presentation of this paper to the entomological world Prof. Morse has given us one of the most interesting and important papers published in recent years on American Orthoptera. The subject matter has been gleaned from a large series of specimens collected in the southeastern states by the author on a trip made in the summer of 1903, under the auspices of the Carnegie Institution. The territory covered extended from Norfolk, Virginia, to the vicinity of Pensacola, Florida, special attention being paid to the mountainous region of western North Carolina.

The paper is divided into a number of sections, the most interesting and important of which are "Zonal Distribution, Locust Societies and Habitats, a Comparison of Campestral and Sylvan Locusts, Macropterous and Brachypterous Species of Locusts, Brachypterism in other Orthoptera," and finally an annotated list of species and localities for each.

Under "Zonal Distribution" (p. 13) by a rather peculiar lapse *Eritettix* is omitted from a list of genera of austral origin not restricted to the eastern states, and *Scirtetica* is said to be confined to the east while the reverse is true. The section on locust societies is worthy of special note as it furnishes a basis for future work in this intensely interesting field. The table of societies presented on page 14, while preliminary and tentative, is evidently the product of considerable study, and, while a consideration of these divisions is unnecessary, it may be remarked that to the few hygrophilous phytophiles given there should be added *Linocephalus elegans*, which species is typically halophilous in New Jersey.

After a discussion of the relation of brachypterous and macropterous species to their habitats, the author sums up his evidence in the statement that: "Brachypterism in locusts is a more complete adaptation to a leaping mode of progression brought about by life in situations where flight is difficult or impracticable, and consequently disadvantageous." While this appears to be more plausible than any theory hitherto advanced on the subject, it has numerous exceptions, one of the most striking of which Prof. Morse's limited stay in the south did not permit him to observe, namely the great abundance of the macropterous *Amblytropidia occidentalis* in typical sylvan surroundings.

Under the list of species the records of *Chlœaltis conspersa*, *Stenobo-*

thrus curtipennis and *Podisma glacialis variegata* from the mountains of North Carolina are extremely interesting. The remarks on the two "species" of *Schistocerca*, *S. alutacea* and *rubiginosa* are noteworthy, the former being considered an inhabitant of grassy swamps and the latter found in drier situations, while in New Jersey the two forms are found by the reviewer in the same surroundings, myrtle thickets on the beaches, and scrub pine and oak in the "barrens," seldom occuring in the swamps. Another interesting fact is that *Melanoplus impudicus* is in the south said to be an inhabitant of "dry, grassy fields," while in New Jersey it is a sylvan geophile, found in surroundings similar to those frequented by *Melanoplus luridus*. These remarks are not made in a derogatory sense, but merely to call attention to the fact that conclusions regarding a species in one section are not always true of it in another.

It is to be regretted that considerable more time for field work was not at Prof. Morse's disposal, as some of his remarks require a little modification when spring and fall observations are considered. The illustrations of the work are quite good and well represent the types of country studied, except that figure 2, plate 5 can hardly be considered "pine barrens," at least not such as the reviewer is acquainted with in Florida, Georgia and New Jersey.

For a very substantial addition to our knowledge of the Orthoptera of the southeastern, or rather eastern states, we must thank Prof. Morse, one which is also of great value as a work of reference to the working Orthopterist, and a material advance in faunistic and ecological entomology. J. A. G. R.

Doings of Societies.

A meeting of the Entomological Section of the Academy of Natural Sciences, of Philadelphia, was held November the 17th. In the absence of the Directors, Mr. Frank Haimbach presided. Eight persons were present.

Dr. Skinner made some remarks on mimicry or protective resemblance, and stated that the Academy had recently received specimens of the beetle *Lycus fernandezii* Duges, belonging to the family Lampyridæ and the moth *Triprocris constans* Hy. Edwards, belonging to the family Pyromorphidæ. When in their natural position with the wings unexpanded these two insects have a perfectly marvellous resemblance. They are taken to be the same species by nearly all observers until their attention is called to the difference in structure. It would be very interesting to find out the significance of any of these likenesses. Some naturalists think they are purely

accidental on the theory that there are so many forms in nature that it is not strange for some to resemble each other.

Mr. Viereck spoke of the distribution of *Culex aurifer*, and said it was abundant on the south meadows near Hartford, Conn. He said it was as abundant there as *sollicitans* is in New Jersey. Where trees were present, the larvæ were much more abundant in the shaded depressions. They flourish about the 20th of May, and none were found a month later nor through the remainder of the summer. *Sollicitans* is found on the coast but does not extend as far inland as in New Jersey, which is accounted for by the natural barrier of the hills. The possibility of an invasion into Connecticut from Long Island was mentioned. Some of the other species found in Connecticut were alluded to. Specimens of *aurifer* were exhibited.

Mr. Daecke said *C. triseriatus* appeared to take the place of *aurifer* in the vicinity of Philadelphia. The larvæ were found in shady places.

Mr. W. J. Coxey was elected an Associate of the Section.

HENRY SKINNER, *Secretary*.

At the meeting of the Feldman Collecting Social, held November 16, 1904, at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth Street, Philadelphia, thirteen persons were present.

Mr. Wenzel announced the death of F. G. Schaupp, and spoke of his personality and interest in entomology.

Mr. Dickerson spoke of the Newark Entomological Society and its recent anniversary meeting.

Mr. H. Wenzel stated he had been studying the insects infesting nuts, acorns, etc., especially *Balaninus*, and exhibited acorns from seven species of oaks. In only one kind of acorn had he been able to observe the ovipositing of the female, the acorn being punctured after it is well developed. He was not aware that the hibernation of the larva in the acorn was on record, but in the present instance it seems that the larva will probably pass the winter in the nut. The larva is small, either being undeveloped or belonging to a species even smaller than *confusior*.

In reply to Dr. Skinner, Mr. Wenzel said that the egg was

probably shoved into the nut by the proboscis of the female. When two larvæ inhabit one nut, they are separated by the median membrane or partition which divides the nut into equal parts.

Mr. Dickerson stated that in Northern New Jersey the chestnuts seem to have escaped infestation this fall.

Mr. Haimbach exhibited 76 species of Tineids, representing a portion of his collection.

Mr. Daecke stated that a nest of *Vespa germanica* recently examined near Delair, New Jersey, contained numerous females and males, with comparatively few workers, and the larvæ in all stages, with pupæ ready to hatch, all of which seemed to be hibernating. Dipterous larvæ were also present feeding on dead wasps.

Dr. Skinner reported that a nest of *Vespa maculata* collected in the dead of winter and brought into the house was found to contain live wasps.

Mr. Dickerson said that in a nest of *V. germanica* examined by him the nest was of temporary character, not being completely covered and was starting to decay.

He also showed specimens of *Ceracis sallei*, a small fungous beetle from Chester and Arlington, New Jersey, which was only recorded heretofore from the Northern part of the State.

On motion, a vote of thanks was extended to Mr. Haimbach for entertaining the members at the last meeting.

Mr. William S. Huntington was elected a member of the Social.

WILLIAM J. FOX, *Secretary.*

The October meeting of the Newark Ent. Society was held on the 13th, with Pres. Keller in the chair and 13 members present. The election of officers resulted as follows:

For Pres. Mr. Geo. J. Keller, re-elected; for Vice Pres. Mr. Geo. Stortz, re-elected; for Secretary Mr. Otto Buchholz, re-elected; for Treasurer Mr. S. H. M. Seib, re-elected; for Librarian Mr. Wm. Broadwell, re-elected; for Curators Mr. J. Angelman (Lep.), Mr. E. A. Bischoff, re-elected (Col.), Mr. A. J. Weidt (Dipt).

Mr. Broadwell reported the capture of the following Lepidoptera: *Semioscopsis merriccella, Hydria undulata, Hydriomena multiferata, Phlyctænia tertialis* and *Schœnobius mellinellus* at Denville, N. J.

Mr. Bischoff reported the capture of *Ptinus fur* Linn (Col.) in chamomile boxes, but was not certain whether the specimens were feeding on chamomile, as all were found between layers of paper. A vote of thanks was extended to Mr. Broadwell for an enlarged photograph of the membership.

Mr. Eugene Winship of Long Branch was unanimously elected to membership. The advisability of keeping a record book of local species was discussed at length, so that observations and dates in rearing and capturing of the rarer species might be entered for the benefit of other collectors; Mr. Buchholz volunteered to take up the Lepidoptera portion of it providing the members would deliver their experiences in writing. Mr. Bischoff agreed to take care of a Coleoptera book on the same lines.

The November meeting of the Newark Entomological Society was held on the 11th, with President Keller in the chair and 23 members present. Visitor Mr. J. Kuenzler of Paterson, N. J.

Prof. Smith promised to send two copies of his "Insects of New Jersey," and on motion it was decided to have the same bound with double interleaves for records of captures, observations, etc. Mr. Hy. Rummel presented a pair of *Cicin. unipunctata* (Col.) to the Society.

He also reported the capture of *Paria viridicyanea* (Col.) at Plainfield, N. J., in July, on wild morning glory.

Prof. Smith read an article written by Mr. Brehme in which the latter stated that the vicinity of Newark was by far the best collecting place of any part of the State that he had seen and worked over during the last two years while in the employ of the New Jersey Agricultural Experiment Station. He deplored, however, that collecting around this section was getting poorer every year, first, on account of the rapid building up of good hunting grounds, and second on account of vandalism exercised by some collectors while searching the plants for eggs

and larvæ, and urged the members to leave the food plants in as good condition as they find them.

He also asked the members to collect all larvæ unknown to them, blow one or more of each species and by rearing the rest of them find out what they are; then present some of them to the Society, and by placing them with the imagos give the collection a more scientific value.

Mr. Grossbeck exhibited some pieces of amber in which were imbedded different species of insects.*

The Sesiidæ (Lepidoptera) were brought up for comparison and discussion; they were pretty poorly represented, except with Prof. Smith and Mr. Engelhardt, both of whom had large series to show. Quite a number of specimens were named and corrected in different collections, and Mr. Engelhardt gave an interesting talk on the life habits of some species and stated that he had bred 21 species in one season. He also showed specimens of an unnamed variety of *Sciapteron simulans*, on which the abdomen was deep orange instead of yellow.

On motion it was decided to bring up the genus *Xylina* (Lepidoptera) for next meeting. Messrs. Brehme, Stortz, Seib, Dickerson and Bischoff were appointed a committee on field meetings.

Mr. J. Landrock of Hoboken and Mr. George Engelhardt of Brooklyn were unanimously elected to membership.

OTTO BUCHHOLZ, *Secretary.*

A meeting of the American Entomological Society was held June 23, 1904. Mr. H. W. Wenzel, Vice-President in the chair. Ten persons were present. Mr. Rehn exhibited the Tettiginæ and Eumastacinæ belonging to the Academy of Natural Sciences of Philadelphia, the U. S. National Museum and Mr. Morgan Hebard. There are a number of new genera and species in this material. Dr. Skinner spoke of the collecting possibilities of the swamp lands west of Essington, Pa., on the B. & O. Railroad. Mr. Rehn mentioned some experiences in collecting in that locality.

HENRY SKINNER, *Secretary.*

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* Rutgers College collection.

A meeting of the American Entomological Society April 28, 1904. Dr. P. P. Calvert, President, in the chair. Nine persons were present. The Executive Committee reported negatively to the Society in regard to the request for the loan of books from the library. Mr. J. A. G. Rehn exhibited an extensive collection of Orthoptera presented to the Academy of Natural Sciences by Dr. Henri de Saussure of Geneva, Switzerland, numbering 800 specimens, 50 genera and 300 species being new to the collection.

He also showed specimens of *Radinotatum brevipenne* described by Thomas. It remained unique for a long time. Mr. Rehn's specimens were obtained at Thomasville, Georgia. He stated that they are found among the pine needles, and that they resemble them in a remarkable manner, and can't be seen until they move. The species is a common one at Thomasville. Mr. Haimbach reported success in collecting Microlepidoptera. He had taken many species, among which were *Eulia triferana* and *Paralechia cristifasciella*. Dr. Calvert exhibited some Lepidoptera in Riker mounts especially prepared to show the neuration. He adopted a new plan, taking the wing and placing it in caustic potash solution for twenty-four hours, then washed in water for fifteen minutes, then in a watery solution of Bordeaux red for twenty-four hours, then washed in water and floated on cards and dried. Both sides of the head were also shown, to note the presence or absence of a proboscis. The following persons were elected correspondents of the Society. Prof. T. D. A. Cockerell, the University of Colorado at Boulder; Nicolas von Adelung, St. Petersburg, Russia; Hofrath Carl Brunner von Wattenwyl, Vienna, Austria, and Ignacio Bolivar, Madrid, Spain.

HENRY SKINNER, *Secretary.*

Minutes of meetings of Brooklyn Entomological Society, held at the residence of Mr. George Franck, 1040 De Kalb Avenue, Brooklyn, N. Y.

April 7, 1904.—Sixteen persons present, the Vice-President in the chair. Mr. John Landrock of Hoboken, N. Y., was elected a member. Mr. Franck presented a paper on "Notes on Anthocharis," illustrated by an extensive series of speci-

mens especially relating to the groups *ausonides*, variations *hyantis* and *coloradensis*, and *sara*, variations *reakirtii* (*stella*) and *julia*. While *hyantis* and *coloradensis* differ in size from *ausonides*, being rather less, the distinction between the variations only depends upon slight changes in maculation, viz., in *hyantis* the central spot on the primaries is larger than that of *coloradensis*, while the underside of the secondaries in *hyantis* is rather more richly decorated than in *coloradensis*. This would seem to confirm the propriety of the retention of only one of these names, *hyantis*, as Dr. Skinner has done. As to group *sara*, Mr. Edwards in his description of *reakirtii* states that there are no yellow females. This would appear to be erroneous, since among a large series of this variation received from sundry localities in California, Nevada and Utah, both white and yellow females of *reakirtii* were found, including white males of *julia*. As no other forms were taken, this would seem sufficient to obliterate the distinction between *reakirtii* and *julia* and these so called variations should be treated as identical, represented by white males and yellow females, the slight differences in maculation being insufficient to entitle either to be treated as a distinct variation. On the other hand, *stella* would seem deserving of recognition since in a series of some 300 specimens from Plumas County, California, only yellow males and females occurred, which corresponds with the statement in Mr. Edward's description that both sexes are yellow. This constancy of color certainly entitled it to be distinguished as a local variation of *sara*.

May 5, 1904.—Sixteen persons present, Dr. Zabriskie in the chair. Relation by various members of the circumstances which led them to become interested in entomology. Dr. Zabriskie stated that his attention was attracted among other things to a number of clay tubes, some six inches in length, pendent from the rafters of an old barn situated on the homestead in Flatbush, L. I. These, he subsequently learned, were constructed by termites. He knew of no record of a similar formation by these insects.

Mr. Weeks stated that he desired to correct some erroneous opinions published in the March Journal of the New York

Entomological Society and elsewhere concerning his paper on "Evolution of the Secondaries of the Catocala," which appeared in the Journal of December, 1903, in which opinions it was alleged that he had stated that the coloration had originated by reason of the pursuit of these insects by birds, which, it was asserted, could not possibly distinguish the colored secondaries to such an extent during flight as to be directed by them, and hence the theory that they had developed under such conditions and for such purpose was untenable. Mr. Weeks called attention to the fact that the article nowhere made such an allegation, and that he had repeatedly stated therein that these secondaries were only displayed as a diversion when the insect was *feeding* and therefore *at rest;* also that due allowance must be made for changed faunal conditions and environments to which these insects had been subjected through vast periods of time, when the forests swarmed with creeping enemies much more rapacious and numerous than any which now survived and when birds had not as yet developed, and that it was totally incorrect to base any deductions upon the premise that present conditions had always prevailed or contemporaneously existed.

June 2, 1904.—Six persons present, the Secretary in the chair. The members were entertained by the relation of the experiences of a collector who had recently returned from a year's sojourn at Obidos some 2000 miles up the Amazon River. The natives were hospitable and trusty. Mosquitoes made collecting almost impossible. Tarantulas swarmed in the huts of the natives and were captured with pincers and forked sticks. The narrator was blinded for several months by loose hairs from these creatures. Ticks and various insects gave great annoyance, and snakes were permitted to run at large within the huts to destroy the vampires, which were dangerous at night. Ants were a most formidable pest, sometimes locating in such numbers beneath the dwellings as to cause their abandonment. The height of the trees and parasitic vines and the density of their combined foliage at the top cast the surface beneath in deep shadow so that few insects could be there taken. At the top the trees and vines bloomed luxuri-

antly and here, far out of reach, gorgeous butterflies and other insects occurred in multitudes, and could only be induced to descend by various lures. One species, *Morpho hecuba*, one of the rarest of this genus, refused every enticement for a long time until, quite by accident, it was discovered that it could be attracted by the reflection of a small piece of looking glass lying upon the ground. Butterflies of various species occasionally congregated in such numbers in moist places that not even space remained to insert a finger between them. At such times one could sit down and select what he wished. Some of the tributaries of the Amazon were infested with poisonous weeds which impregnated the water to such an extent that dangerous and even fatal effects resulted from wading in them. During the dry season the river was lowered some thirty feet, having broad sandy shores on either side. Many of the Lepidopterous larvæ, instead of consuming an entire leaf, had the curious habit of biting out of it a series of holes of various sizes, but of constantly recurring form at regular intervals, so that the final effect was that of a lace pattern. The narrator exhibited a number of leaves thus bitten showing many interesting designs.

ARCHIBALD C. WEEKS, *Secretary*.

The October meeting of the Entomological Section of the Chicago Academy of Sciences was held as usual at the John Crerar Library on the 20th, eight members and one visitor being present. The recorder read a letter from Mr. John Comstock enclosing a specimen of *Terias mexicana* which he had taken October 9th at Williams Bay, Lake Geneva, Wisconsin. This is unusually far north for this species, but the recorder has since learned that Mr. Beer also captured two specimens this year, one October 9th within the Chicago city limits and one at Hessville, Indiana, south-east of Chicago, on October 16th. Mr. Higley announced the arrival of twenty Comstock cases for the Academy collection.

Mr. W. L. Tower gave a very interesting talk on his experiences while collecting in Southern Mexico about sixty miles south-east of Mount Orizaba. The locality was a fertile valley,

lying between high, forest-clad mountains, these in turn being surrounded by low-lying plains.

He found it a veritable zoological oasis, various species of Lepidoptera, etc., being taken, which had not been recorded farther north than Honduras. Mr. Tower's subject was "Insects in Tropical Forests," and he paid particular attention to the habits of the butterflies including Morphos, Papilios, Heliconidæ, Pieridæ, etc. Coleoptera were few and occurred principally at the edge of the forest. Here also, numerous mosquitoes congregated, especially near the river which skirted the base of the mountains. *Stegomyia* predominated in the morning and during the day, its place being taken by *Culex*, *Anopheles* and others at night. The Morphos and Papilios were found to roost low down in the dense forest between the buttresses of the trees, and upon awakening, at first fly low, gradually mounting higher as the day advanced. By ten or eleven o'clock they were high up, flitting about the flowers of the vines which formed a veritable carpet over the tree tops. This he was able to observe only from a projecting ledge, which overlooked a portion of the forest. He described the scene as extremely beautiful with hundreds of brilliant Morphos and Papilios to be seen within a comparatively limited area.

Mr. Tower also spoke of the difficulties to be met with on a trip to such a locality. Disease, including yellow-fever and malaria; vermin, wire-worms, bot-flies, chigres, etc., and frequent and unexpected electrical storms were discouraging features. He stated also that, although species and specimens were often numerous, they were by no means easily caught, as they were usually either inaccessible or of swift and deceitful flight.

He made several trips to this locality, but considered the beginning of the rainy season May 1st to July 1st as the best for collecting.

Those present expressed themselves as greatly pleased with the entertaining talk of Mr. Tower. The meeting adjourned at 9.50 P. M.

A. KWIAT, *Recorder.*

EXCHANGES.

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☞ These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and only when necessary those at the top (being longest in) are discontinued.

Wanted.—*Papilios* of the world. Must be perfect. Send list and state what you wish in exchange. C. F. Groth, 141 E. 40th St., New York.

Wanted.—Fertile eggs of *Citheronia regalis* and *Basilana imperialis*. Will pay cash for twenty-four of each.—Phineas Whiting, 106 Fairmount St., Lowell, Mass.

Wanted in southern and western United States correspondents who will collect *Cicindela* in exchange for named Coleoptera of Mexico, South and Central America, Europe and Australia. Write at once. Zoological Museum, 37 Zoological Building. University of Chicago, Chicago.

Insects of all orders, chiefly from Kansas, Colorado, New Mexico and Arizona, for North Amercan species not in my collection. List of duplicates and desiderata on application. F. H. Snow, Lawrence, Kansas. (Prof. Systematic Entomology in the University of Kansas.)

Wanted, to complete files: Illinois State Laboratory Natural History, Bulletin, Vol. i, Nos. 3 and 4; Vol. iv, articles, 9, 14 and 15; Vol. v, articles 1 and 6. Many valuable exchanges to offer in different groups and subjects. James G. Needham, Lake Forest, Ill.

Wanted to exchange Lepidoptera. Write before sending list.—D. F. Berrenger, Fostoria, Ohio.

A few examples of *Microcyptus testaceus* Lec. for exchange. Desire Cleridæ and Cerambycidæ.—L. H. Joutel, 164 E. 117 St., N. Y. City.

Lepidoptera.—I have a large number of duplicates for exchange. Also pupæ, including *Triptogon modesta*, and other *sphinges*. Address Frank H. Engl, 1048 Byron St., Chicago, Ill.

I have a German correspondent anxious to exchange perfectly prepared and named European insects in all families, and orders for American insects. Address and introduction supplied. W. D. Kearfott, 114 Liberty St., New York.

Callosamia calleta cocoons to exchange—*Sphinx* pupæ desired.—W. T. Buxton, 17 Walter St., Somerville, Mass.

Wanted all kinds of native pupæ and cocoons, take also rare p'ants in exchange for exotic and native butterflies. Chas. F. Timm, 131 Ralph St., Brooklyn, N. Y.

Lepidoptera, duplicates. Fine tropical diurnals from Gilolo, Borneo, Jamaica, Brazil, Peru, W. Africa, Cuba, offered. Wanted desiderata from Haiti, P. Rico, Phillippines, Ecuador, Bolivia, Amazon River, etc. Walter Dannatt, 75 Vanburgh Park, London, England.

Lepidoptera.—I have 250 *Luna* cocoons to exchange for others or for exotic butterflies in paper.—M. Reyher, 1601 Willington Street, Philadelphia, Pa.

Cocoons. of *Callosamia cynthia* to exchange for other cocoons of North American moths.—Miss E. Avery, McPherson Library, Indiana Avenue and F. Street, Philadelphia, Penna.

Hemiptera and Hymenoptera from all regions of the earth, mounted or unmounted named or unnamed. Will give for these named and mounted material in other Orders from Southwestern United States, Nicaragua and Cuba.—C. F. Baker, Estacion Agronomica, Santiago de las Vegas, Cuba.

Lepidoptera.—Pupæ and cocoons of native Papilios, Sphingidæ and Saturnidæ wanted in exchange for pupæ of *Pap. ajax*, Cresphontes, *Cith. regalis, Anisota rubicunda, senatoria, stigma* and hybernating larvæ of *Apatura, celtis and clyton.*—EARNEST JEHEBER, 118 Reservoir Street, Lancaster, Pa.

Wanted.—A good second-hand insect cabinet in exchange for a Haynes Excelsior Guitar in fine condition, with case; original cost $35 00. Correspondence desired.—C. E. Montgomery, 10 Cabot Street, Portsmouth, N H.

Pupae P. cresphontes, P. ajax, D. hylæus and other Lepidoptera for exchange. Wanted from original collectors only, Lycænidæ and Hesperidæ of U. S. and Canada with full data. W. W. Newcomb, M. D., 347 Trumbull Ave., Detroit, Mich.

Will collect next season all orders, chiefly Lepidoptera. Former correspondents invited to write. H. A. Kremers, White Bird, Idaho.

For exchange.—Several varieties of catocalæ of this locality for some of other localities. Also a large variety of other moths and butterflies. Dr. A. F. Hyde. Shelby, Ohio.

Loans of Lepidopterous freaks desired for purpose of photographing. Will give prints of same for privilege. Kindly write, stating what you have. I have a number of Entomological works to exchange for other books or N. A. Lepidoptera. Send for list. H. H. Newcomb, 43 Tremont St., Boston, Mass.

Diptera wanted from all parts of North America. Offer in exchange named European Diptera, named Indian Odonata and unnamed species of other orders from India. Could pay small price for collecting if from specially interesting localities. Must be on long pins, unset, in good condition with full data. E. Brunetti, General Post Office, Calcutta, India.

Lepidoptera.—Pupæ of *Phlegethontius quinquemaculatus* and *carolina, Papilio philenor* wanted.—George Franck, 1040 DeKalb Avenue, Brooklyn, New York.

Will exchange Californian Lepidoptera for any species of Hepialidæ, American or European, except *H. sequoilus, montana* and *behrensii.* Will also take imperfect specimens. F. X. Williams, 1015 Scott St., San Francisco, Cal.

Cosmia paleacea and *puncterina* wanted at once from all parts of North Amer. Also *Chrysophanus hypophlæus* from mountain districts, and many common Noctuidæ.—F. H. Wolley Dod, Millarville, Alberta, N W. T., Canada.

Wanted.—North American Lepidoptera, especially Catocalas and Sphingidæ, also exotic Papilios. Will pay cash or give good exchange. Herman J. Erb, 536 Plum Place, Union Hill, N. J.

Catocala and Moths of Pennsylvania. The undersigned will give good exchange in cash or specimens for the following Catocala: *Catocala olivia, sancta, dulciola, mira, frederici, amestris, rosalinda, hermia, elda, dejecta,* and *luctuosa,* or for any moths of Pennsylvania that are new to my collection. Philip Laurent, 31 East Mt. Airy Avenue, Philadelphia, Pa.

Bred specimens of *Paphia troglodyta* and other diurnals in papers, also cocoons of bombycids and pupæ of sphinges for exchange. Wish *sphinges.* R. R Rowley, Louisiana, Mo.

Lepidoptera: I have some good Noctuidæ in exchange for desirable North American Heterocera. *Xylina, Calocampa* and *Plusiidæ* especially desired. Henry Engel, Box 35, Oak Station P. O., Allegheny Co., Pennsylvania.

Lepidoptera to exchange for specimens new to my collection. Chas. Krueger, 1162 N. Lincoln Street, Chicago, Ill.

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